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What Is Claimed Is:

1   1. A method for transmitting image data of a scanner

2   including the steps of:

3   receiving plural scanning lines of image data, and storing

4   the scanning lines of image data in plural line buffers;

5   retrieving pixel data at the same row from the plural line

6   buffers;

7   using the pixel data to produce a low-resolution image data

8   and transmitting the low-resolution image data to a receiving

9   end;

10   using the pixel data to produce plural data difference

11   values; and

12   compressing the data difference values and transmitting

13   the compressed-data difference values.

2   2. A method for transmitting image data of a scanner

2   including the steps of:

3   (i) receiving plural scanning lines of image data, and

4   storing the scanning lines of image data in plural line buffers;

5   (ii) retrieving pixel data at the same row from the plural

6   line buffers;

7   (iii) using the pixel data to produce a low-resolution

8   image;

9   (iv) using the pixel data to produce plural data difference

10   values, which can combine with the low-resolution image data to

11   produce a high-resolution image;

12   (v) compressing the data difference values;

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13   (vi) determining whether all of the scanned lines of image

14   data are retrieved, going to next step if yes, otherwise going

15   to step (ii);

16   (vii) transmitting the low-resolution image data to a

17   receiving end;

18   (viii) transmitting the compressed-data difference values

19   to the receiving end;

20   (ix) determining whether all of the frame of image data is

21   retrieved, going to next step if yes, otherwise going to step

22   (xi);

23   (x) providing a frame-ending signal to the receiving end;

24   and

25   (xi) providing a line-ending signal to the receiving end

26   and going back to step (i).

1   3. The method as claimed in claim 1 wherein the low-

2   resolution image data includes a pixel datum of the retrieved

3   pixel data.

1   4. The method as claimed in claim 1 wherein the low-

2   resolution image data includes the average of the retrieved

3   pixel data.

1   5. The method as claimed in claim 1 wherein the number of

2   the scanned lines is 2.

1   6. The method as claimed in claim 1, further including the

2   step of:

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3   determining whether all of the frames of image data are

4   retrieved, providing a frame-ending signal to the receiving end

5   if yes.

1   7. The method as claimed in claim 2 wherein, in step (viii),

2   a transmission-ending signal is transmitted to the receiving end

3   while transmitting the compressed-data difference values to the

4   receiving end.

1   8. The method as claimed in claim 2 wherein the low-

2   resolution image data includes a pixel datum of the pixel data

3   retrieved in step (ii).

1   9. The method as claimed in claim 2 wherein the low-

2   resolution image data includes the average of the pixel data

3   retrieved in step (ii).

1   10. The method as claimed in claim 2 wherein the number of

2   the scanned lines is 2.

1   11. The method as claimed in claim 3 wherein the data

2   difference values are taken from the derived difference of the

3   pixel datum served as the low-resolution image data and the pixel

4   data except for the pixel datum.

1   12. The method as claimed in claim 4 wherein the data

2   difference values are taken from the difference of the pixel data

3   and the average value of the pixel data.

1   13. The method as claimed in claim 8 wherein the data

2 difference values are taken from the difference of the pixel

3 datum served as the low-resolution image data and the pixel data

4 except for the pixel datum.

1   14. The method as claimed in claim 9 wherein the data

2 difference values are taken from the difference of the pixel data

3 and the average value of the pixel data.

1   15. A method for transmitting image data of a scanner

2 including the steps of:

3   (i) receiving plural scanning lines of image data, and

4 storing the scanning lines of image data in plural line buffers;

5   (ii) retrieving pixel data at the same row from the plural

6 line buffers;

7   (iii) using the pixel data to produce a low-resolution

8 image data and storing the low-resolution image data in a buffer

9 of the scanner;

10   (iv) using the pixel data to produce plural data difference

11 values, which can combine with the low-resolution image data to

12 produce a high-resolution image;

13   (v) compressing the data difference values and storing the

14 compressed-data difference values in the memory of the scanner;

15   (vi) determining whether all of the scanned lines of image

16 data are retrieved, going to next step if yes, otherwise going

17 to step (ii);

18   (vii) transmitting the low-resolution image data to a

19 receiving end;

20   (viii) determining whether all of the frame of image data

21 is retrieved, transmitting the compressed-data difference

22 values and a frame-ending signal to the receiving end if yes,

23 otherwise providing a line-ending signal to the receiving end

24 and going back to step (i).

1   16. A method for transmitting image data of a scanner

2 including the steps of:

3   (i) receiving plural scanned lines of image data, and

4 storing the scanning lines of image data in plural line buffers;

5   (ii) retrieving pixel data at the same row from the plural

6 line buffers;

7   (iii) using the pixel data to produce a low-resolution

8 image data and storing the low-resolution image data in the

9 memory of the scanner;

10   (iv) using the pixel data to produce plural data difference

11 values, which can combine with the low-resolution image data to

12 produce a high-resolution image;

13   (v) compressing the data difference values, and storing the

14 compressed-data difference values and a segment-ending signal

15 in the memory of the scanner;

16   (vi) determining whether all of the scanned lines of image

17 data are retrieved, going to next step if yes, otherwise going

18 to step (ii);

19   (vii) determining whether all of the frame of image data

20 is retrieved, going to the next step if yes, otherwise going to

21 step (x);

22   (viii) transmitting the low-resolution image data to a

23 receiving end;

24   (ix) transmitting the compressed-data difference values

25 and a frame-ending signal to the receiving end and going to the

26 end;

27   (x) providing a line-ending signal to the receiving end and

28   going back to step (i).

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1   17. The method as claimed in claim 15 wherein the low-

2   resolution image data includes a pixel datum of the pixel data

3   retrieved in step (ii).

1   18. The method as claimed in claim 15 wherein the low-

2   resolution image data includes the average of the pixel data

3   retrieved in step (ii).

1   19. The method as claimed in claim 15 wherein the number

2   of the scanning lines is 2.

1   20. The method as claimed in claim 15 wherein, in step

2   (viii), a transmission-ending signal is transmitted to the

3   receiving end while transmitting the compressed-data difference

4   values to the receiving end.

1   21. The method as claimed in claim 16 wherein, in step (ix),

2   a transmission-ending signal is transmitted to the receiving end

3   while transmitting the compressed-data difference values to the

4   receiving end.

1   22. The method as claimed in claim 16 wherein the low-

2   resolution image data includes a pixel datum of the pixel data

3   retrieved in step (ii).

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1   23. The method as claimed in claim 16 wherein the low-

2   resolution image data includes the average of the pixel data

3   retrieved in step (ii).

1   24. The method as claimed in claim 16 wherein the number

2   of the scanned lines is 2.

1   25. The method as claimed in claim 17 wherein the data

2   difference values are taken from the difference of the pixel

3   datum served as the low-resolution image data and the pixel data

4   except for the pixel datum.

1   26. The method as claimed in claim 18 wherein the data

2   difference values are the difference of the pixel data and the

3   average value of the pixel data.

1   27. The method as claimed in claim 22 wherein the data

2   difference values are the difference of the pixel datum served

3   as the low-resolution image data and the pixel data except the

4   pixel datum.

1   28. The method as claimed in claim 23 wherein the data

2   difference values are the difference of the pixel data and the

3   average value of the pixel data.